Abstract

A method and apparatus improves the accuracy of temperature measurements by sampling measurements from a remote sensor, where currents of different current densities are applied to the remote sensor in a time-interleaved fashion. The remote sensor includes at least one PN junction that produces a voltage corresponding to the applied current at each instance of time, and related to the temperature of the remote sensor. By applying time-interleaved current densities to the remote sensor, adverse effects from temperature variations during the measurement are minimized. Sequences of current biases having differing current densities in a forward order are applied to the remote sensor, followed by the same sequence being applied to the remote sensor in a reverse order. Similarly, a random or pseudo-random sequence may be employed in a forward and reverse order. The application of forward and reverse sequences is utilized to minimize errors in the temperature measurement.